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REMARKS ON THE METHODS OF MAKING MICROSCOPICAL SOCIETIES SUCCESSFUL

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The ideal Microscopical Society would be possible in the presence of an ideal constituency. Located in the midst of a cultivated population, where large numbers were interested in microscopy, busied in its study, expert in its methods, devoted to its development, and possessed of abundant leisure and wealth to gratify this taste within reasonable limits, the society would exist by sheer force of circumstances, would assume character and achieve success without question, difficulty or advice. With abundant pecuniary resources, it would doubtless possess an ample and attractive establishment of its own, furnished with libraries and cabinets, whose rooms would not only be available for formal meetings, but would always be open for the entertainment of members and of such visiting fellows as might be considered worthy of their hospitality. Reference libraries would represent as fully as possible the world's literature, both in books and periodicals, pertaining directly or indirectly to microscopy; cabinets of slides and other illustrative specimens would be equally extensive in range, while the supply of microscopes and accessories would be amply sufficient not only for the study of the cabinet specimens, but also as a cabinet itself, illustrating all important steps, from first to last, in the evolution of the microscope of the day. Probably laboratory facilities for illustrating, testing and comparing new forms of apparatus or new methods in technique, and possibly for original research, would be added. The stated meetings held at this microscopical headquarters would be universally prized, because universally valuable; by the expert as opportunities of wholesome stimulus and comparison, by the less experienced as means of instruction and encouragement, and by all as occasions of congenial and delightful intercourse. The published papers and proceedings would represent not only the latest progress

in this department of science and art, but the wisest judgment attainable, and would furnish to the rest of the world its foremost educator and its last court of appeal.

But, unfortunately, too few microscopists are possessed at once of extensive education, unbroken leisure and assured wealth. Most are subject to the limiting demands of business or of social engagements; and the few having ample opportunities are so scattered or isolated that the above conditions are present, even approximately, in but few places in the world; and certainly in few, to say the least, has the full realization been attained, or even attempted or approached. Especially in this country, with its comparatively recent organization of society, are we limited by the exigencies of other affairs; and the practical question which presents itself to us is not how to make out of abundant materials that organization which then would inevitably grow without help or care, but how to obtain the best possible result, and that a reasonably good one, out of limited material and under difficult circumstances. The following suggestions, results of experience as well as theory, are given in a wholly practical spirit, as a contribution to the resources of those who may be interested in the subject.

MEMBERSHIP.—The primary difficulty in organizing a society is the want of enough members of exactly the desired kind. There are some who feel the need of such associations, but in no city, in America at least, are there yet enough persons qualified for the highest duties of membership, to place the enterprise, where its leaders would wish, fairly high among the great learned bodies of the world. Nor need such an unattainable beginning be waited for. While a society which exists only in name, consisting wholly of a few officers who alone constitute the society of which they announce themselves the officials is an imposition and its alleged existence a farce, yet a society consisting of but few members, still fewer of whom are by education or experience in affairs qualified to teach or lead, may and should be doing good work in educating those who shall soon add to its numbers and power. This consideration is probably the only reasonable answer to the question as to eligibility to membership. A club that establishes its standard so high as to admit only a few members of somewhat equal experience

who look with disdain and wholly unequaled conceit upon their less favored neighbors, is as selfish in policy as narrow in scope, and possesses only the one tolerable feature that it certainly will die young. Beginners should and must be welcomed and interested, and retained by making them feel that they not only are not intruders or hindrances, but that they are a valuable and appreciated acquisition to the working force of the society. On the other hand the experienced and thoroughly scientific members must give character to the society, and must be freely recognized as its leaders; and it would be a fatal mistake to accept enough of immature or unscientific members to give tone to the society or to control its policy. To what extent the latter class can be safely admitted will therefore depend upon their own character and discretion, quite as much as upon the executive ability of the leaders; and the same consideration will determine the equally practical questions whether scientists who are not microscopists should be admitted as members, and how freely the meetings should be open to visitors. Whether the society should have a formal connection or organic union with any other society will depend on local considerations and must be independently determined in each individual case. Organizing as a branch or section of a society of larger scope, and holding meetings alternately with those of other sections, for instance, possesses mutual advantages of considerable importance, and has been tried in certain localities with marked success.

MEETINGS.—Whatever else the society may do or not do, there is one thing which it certainly will do—meet; and almost universal experience establishes the time of meeting as monthly. A few societies have succeeded in sustaining semi-monthly meetings for a time, or have even attempted the more ambitious weekly plan, but there is evidently no demand, as yet, in the exigencies of the service for such frequency. On the other hand, longer intervals than one month offer too great interruptions, cause as well as show a lack of interest, and indicate an enterprise that lacks but little of extinction. The nature of the exercises at the stated meetings will naturally depend upon the character and extent of the membership. A formal lecture filling each evening is an attractive program, inasmuch as it is easy to procure, a few appointments among the most

capable members being sufficient to provide for a whole season, and the entertainment and instruction provided will be good. It will fail, however, of one of the principal objects of the society. So far from drawing out, as active participants, the less experienced members, it will discourage their speaking and probably ensure their silence. But if the exercises be left wholly to volunteer and informal communications, with or without an announced subject, they will often degenerate into trivial and tiresome conversations which, as surely as the lecture, will be monopolized by a few of the most ready speakers. A frequently successful compromise between the two extremes is the appointment in advance of one or more members, according to the size of the society, who shall open the meeting with short communications, occupying only a portion of the evening, the subsequent time being left open to volunteer speakers. Such an appointment will be readily accepted and well filled by persons who could not and should not be tempted to assume the responsibility of a regular lecture; the practice will be the most certain means of preparing the speaker for a more important position, and may not unlikely bring forward suggestions valuable to the most experienced, while any deficiency in the latter respect may be remedied during the time that remains for others. For persons wholly unused to public speaking, the bringing forward of recently prepared or studied objects with explanations or criticisms, is probably the easiest and most useful beginning. Exhibitions of new acquisitions of instruments and apparatus is probably the easiest appearance for a beginner, and certainly the worst, as it is the surest way to learn to talk without thinking; and the contribution itself, except in rare cases of real originality of design or special ingenuity of application, is useless and tedious to the expert, and dissipating, and therefore much worse than useless, to the amateur. Practical demonstrations of details of work, in manipulation, illumination, mounting, etc., are showy features which give variety and are often profitable, though liable to abuse, as such work is especially liable to grow, to the exclusion of that which requires more intellectual effort, and, therefore, to give less intellectual improvement, and thereby to lower the tone and usefulness of the society. Nor should, in assigning its true and secondary position to such work, the distinction be

overlooked between a school, where the learners are a distinct class to be instructed by the teachers, and a society where none should be exclusively teachers or learners but all should be members together. In societies of large membership and ample resources, the plan has proved successful of confining the regular monthly meetings to more distinctly literary work, and relegating the exhibition and discussion of objects and apparatus to a stated conversational meeting held during the interval. Assigning different branches of the work to special sections of the society, stimulation by the offer of prizes, or by the introduction of lectures by non-resident speakers, or hours devoted to questions and answers, are expedients which have been employed with about the same advantages and disadvantages as in other organizations. Likewise the devotion of a portion of the evening to sociability, refreshments being served and the severe formality of a public assembly being suspended, may be advisable under certain circumstances, and may not only be a relief and a pleasure to the most scholarly, but may also render the meetings able to attract some valuable participants who would not otherwise attend.

FIELD MEETINGS.—A series of field days, devoted to excursions for collection, study and sociability combined, is especially applicable to such a department of science, has been enjoyed with success in many instances, and seems capable of a much wider application. The field meetings have long been an established feature and apparently a valuable one of one of the great London societies, the Quekett Club. They have been a prominent and most successful feature of the writer's local society (Troy Scientific Society) for seventeen years, and our experience justifies a high estimate of their value.

EXHIBITIONS.—The same is partly true of occasional, usually annual, receptions or soirées, with exhibition, not of microscopes, but of objects by means of microscopes. Such exhibitions, notwithstanding the chronic objection that they are not of a high scientific merit, a fact which can be known to no one better than to their advocates, are doubtless capable of stimulating a certain sort of indifferent members as well as of interesting and instructing many valuable friends. As at first conducted, an exhibitor would sit down at

a table with his microscope and a box of slides, sometimes containing a dozen, and entertain the few visitors who gathered around the table, and in some cases even sat down to the work, while all the rest of the company was excluded from the table often for an hour at a time. Meanwhile, the exhibition was one of microscopes rather than of objects, the former being the leading feature of the program, while the latter were mentioned secondarily and incidentally, and sometimes not at all, a notice that several objects would be shown being deemed sufficiently definite for them. As early at least as 1871 we reversed this in the exhibitions given by the Troy Society, arranging the program strictly according to a classification of the objects and mentioning the microscopes incidentally, if at all; accepting only two objects for each microscope, the change from one to the other being made at a fixed hour in the middle of the evening. There is now sufficient experience to justify the statement that only one object should be shown under each microscope, without change during the evening, under any circumstances. For a small party this will allow more time to study the objects and discuss them, and for a large party it will reduce to a minimum that necessity of hurrying from microscope to microscope, which is perhaps the greatest unavoidable fault of the public exhibitions. The rules limiting the number of objects shown, and insisting upon their intelligent classification, have been fully justified by the test of success as well as by that of reason, notwithstanding the slight friction their application has sometimes caused when first introduced by a new society or one accustomed to a methodless style.

PUBLICATION.—The habitual publication of their papers and proceedings will probably be undertaken by most societies when strong enough to furnish the material and bear the expense. Much might be said for and against the custom. It strengthens the society, by the prominence given thereby, and it interests and pleases the members by the flattering display of authorship. On the other hand, it constantly inflicts upon a long-suffering world an immense mass of material which is of no value, and is, therefore, a nuisance to readers and quite the opposite of a credit to writers. That really new and valuable material should be published and will be thankfully received, is too obvious to require statement; but

here is much that is wholly creditable in the oral proceedings of at local society, and possibly some in a professional or general one, which is most profitable practice for the speaker and really interesting to his friends, but is wholly unsuitable for publication. It is not microscopical literature alone that would gain a great esteemed advantage by such an impartial censorship of material as would cause a reduction in the amount and a corresponding elevation in the average character of its publications.

ESTABLISHMENT.—The possession of a club-house, or at least of an adequate suite of rooms, well furnished and well supplied with library, cabinet and apparatus, will inevitably be acquired as soon as the society is strong enough to bear the burden. The only caution required is not to assume the load too early. One of the most common causes of extinction to scientific societies, except that of starting them where there was really nothing to make them of, is the financial stress occasioned by setting out in a costly style which is easily borne in the enthusiasm of the first few years, but which becomes certain ruin when, through the withdrawal of indifferent members or the negligence of outside patrons, the annual subscription begins to fall off. A costly establishment usually requires, at best, a high rate of annual subscription, and may thereby prevent growth of the society by excluding some persons who, otherwise than financially, are capable of becoming its most valuable members. In some cases societies have generously, though only partially, evaded this difficulty by welcoming to the hospitality of their rooms students unable to bear the expense of membership. By arranging to meet at the rooms of other bodies, or even, if the membership be small, in succession at the dwellings of members, a really useful society may be maintained at a merely nominal expense and without danger of being extinguished by debt, until it has had time to test its ability to safely assume a more ambitious position.

LIBRARY.—The acquisition, by a small and weak society having no permanent rooms or endowment, of a small number of books, instruments or slides through occasional donations by members, is a brave beginning, but one which, unfortunately, is seldom successful. Sometimes the accumulation of such property in the hands of a few members has been considered, however unjustly, the reason

why some society has failed to welcome to its membership those who should have been sought and encouraged, and has thus stood in the way of its progress. If it be policy for a weak society to acquire any books, they should evidently be standard books of reference such as would be kept in constant use, and not costly memoirs to be laid away somewhere. There is one kind of library service, however, the furnishing of journals, which any society, however small, can supply to its members and which has proved a most successful expedient. By subscribing for all the current microscopical journals, and some in allied branches of science, and making arrangements for passing them from hand to hand in the most convenient succession, and at stated intervals, each member may be furnished with all the periodical literature at a very slight expense. One of the incidental advantages of thus being able to look over a larger number of journals than each person would think of ordering for individual use, is the opportunity to select more intelligently, and to correct from year to year the list he may require to have always at hand by personal subscription.

A very methodical plan, which is therefore easily kept in efficient operation, and which has proved successful in both large and small clubs, is to circulate as many parcels as there are members participating; the pamphlets being tied into a book-like cover large enough to hold one or two of the largest and thickest and therefore a much larger number of the thinnest. The parcels are retained by each member one week, and are all forwarded to the next member in regular succession on the same stated day of the week, as Monday, Saturday, or any other day that may have been selected. Each member thus has a constant supply of the reading matter; and if he does not receive a parcel on the proper day, it becomes his personal interest as well as his duty to seek an immediate correction of the error, since the parcel must leave him at the stated time, however late he may have obtained it. Meanwhile one member who acts as "starter," instead of simply forwarding the parcels like the rest, removes everything from each as it reaches him and substitutes the journals or other pamphlets received from the publishers during the past week, and forwards it as thus refilled, except that in case of very large pamphlets, or of disproportionate receipts during cer-

tain parts of the month, a portion is kept back a week or two in order to equalize the parcels as much as practicable. In case of circulating also large papers like "Science," "Nature," or the "Scientific American" and its "Supplement," these are sent, rolled in leather like a music roll, on alternate weeks between the smaller pamphlets. If a new member joins the circuit, or an old one leaves, the starter merely subdivides one parcel or consolidates two, after which the usual routine is maintained.

COÖPERATION.—Finally, the influence of the American Society of Microscopists should not be forgotten as a means of making local societies successful. The prestige of size, the stimulus of numbers, the variety in place of meeting, and the advantage of somewhat representing, though indirectly, numerous sections of the country with their local societies, give to this society an influence which has increased not only the number but the character of the local societies. By attending its meetings, participating actively in its membership, and acquiring its inspiration, members will gain courage and experience to aid them in smaller enterprises at home.